

Remarks

1. The Rejection of the Claims under U.S.C. § 112, first paragraph.

The Office Action rejected claims 1-3, 5-15 and 17-20 under 35 U.S.C. 112 as failing to comply with the written description requirement. In particular, according to the Office Action, the limitation in claims 1 and 12 “storing the sensed voltage amplitude values” is not supported by the original specification so that the claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. Still according to the Office Action, in the original specification, only the limitation “storing sensed voltage values” can be found so that the limitation “voltage amplitude values” would be missing.

Applicant respectfully disagrees and reconsideration is requested.

According to US-courts, an applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention. *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997).

The following explanation is offered to show that the limitation “storing sensed voltage amplitude values” was already adequately described in the original specification:

a. The meaning of the word “voltage”. Webster’s Encyclopedic Unabridged Dictionary of the English Language (edition 1996) gives as definition of the word “voltage”: *electromotive force or potential difference expressed in volts*. Thus, each time in the specification the words “voltage values” or “BEMF value” are used, only a value which can be expressed in volts can be meant. Electrical signals can have different characteristics, e.g. amplitude, frequency, phase and time delay. Of all these characteristics, only the amplitude (corresponding to a potential difference) is expressed in volts and by consequence, the only interpretation which can be given to the words “voltage values” or “BEMF value” is the value of voltage amplitude. This, it is

submitted, is well known to one skilled in the art.

b. In the original specification itself, the word “amplitude” is also used, and not only in relation with the state of the art (page 2, lines 1, 11 and 18) but also in relation with the invention itself. On page 10, lines 24-27 mentions the influence of certain parameters on the amplitude and shape of the BEMF signals and on page 14, lines 4-12, how this influence “on the amplitude of the signals” can be removed. In the same paragraph, reference is taken to Fig.4 and the “filtered measured back EMF signal Vint”. From this paragraph, it is thus clear that, in the description as filed, by “voltage values” or “the measured back EMF signal” is meant the amplitude of the voltage values or the BEMF signals.

c. From the drawings and the accompanying part of the specification it is also clear that by voltage values the amplitudes of the voltage values is meant. Fig. 4 shows a circuit of analog processing of back EMF signals, obtained according to the present invention. According to that circuit, the BEMF signals are sampled (switch 12) and stored in a capacitor (Cs). A capacitor can only store the amplitude of the signal at its entry. The sampled and stored signal is then integrated by an integrating capacitor (Ci). Here again, only the amplitude of a signal can be integrated. The integrated signal is then compared in a comparator element (14), which is clearly a differential amplifier (see the – and + signs within the symbol of 14). It is well-known to a person, skilled in the relevant art, that a differential amplifier compares the amplitudes of the signals at its input. Also according to Fig. 4, only amplitudes of the BEMF signals are measured (sensed), stored and further processed. On top of that, Fig. 4 is a one-to-one translation of the wording of claims 1 and 12.

d. Fig. 7 and 8 give, in function of time, the relevant back EMF waveforms. Fig. 7(a) and (b) show the waveforms of the signals induced in the first winding (3). Fig. 8(a) shows the voltage Vs, corresponding to the charge on the sampling capacitor and Fig. 8(b) shows the voltage on the integrating capacitor. In these diagrams, the Y-axis corresponds always to a V, which is a voltage, and indicates the amplitude of the different voltages.

Each of the arguments a to d show clearly that in the specification and drawings as filed, by voltage value is meant the amplitude value of a voltage, which is also the

common understanding of these words.

The claimed invention with its limitations was thus described in the original specification and the applicant had possession of the claimed invention as of the filing date. By consequence, claims 1 and 12 comply with the written description requirement, and the rejection should be retracted.

All other claims were rejected since they are depending on rejected base claims. Claims 1 and 12 complying with the written description requirement, the same can be said in relation with the depending claims.

2. The Rejection of the Claims under 35 U.S.C. § 102.

The Office Action rejected claims 1-3, 5-15 and 17-20, as best understood, under 35 U.S.C. § 102(b) as being anticipated by Fincher (U.S.P. 4,851,755).

By best understood is meant that the limitation “voltage amplitude values” is interpreted as “voltage values”.

After the arguments, advanced under 1. above, it is clear that the only interpretation to be given in claims 1 and 12 to the limitation “voltage amplitude values” is “amplitude values of voltages”.

As indicated in the Office Action, page 3, point 4, Fincher discloses an apparatus and method for detecting rotation of a rotor of a multi phase motor with bipolar drive whereby the apparatus comprises means for storing and considering a predetermined number of consecutive pulses in order to determine running or stall condition of the motor (see e.g. col. 2: 26-29). In claims 1 and 12 of the present invention, the amplitude of the voltages induced in the first and the second winding is sensed and stored. The method/apparatus for detecting rotation of a rotor of a multiple phase motor with bipolar drive, used in claim 1 and 12 of the present invention, is thus completely different from the one disclosed in Fincher. The subject matter of claims 1 and 12 is thus not anticipated by Fincher.

Fincher does not hint in the direction of storing full voltage values in a memory device and does also not disclose any further processing of the sensed voltage after being stored. Claims 1 and 12 are thus also non-obvious in view of Fincher.

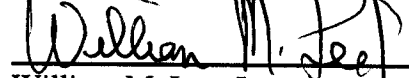
Further arguments related to the novelty and non-obviousness of claims 1 and 12 can be found in applicants' response of July 27, 2006, in particular part III.

By virtue of their dependency on claim 1 or 12, claims 2, 3, 5 to 11, 13 to 15 and 17 to 20 are novel and non-obvious as well.

Therefore, it is submitted that the application is now in condition for allowance and the Examiner's further and favorable reconsideration in that regard is urged.

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Respectfully submitted



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